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IS 3580 (2007): General requirements for distress signals for lifeboats and liferafts [TED 19: Marine Engineering and Safety Aids]

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भारतीय मानक

जीवन रक्षक नौकाओं और जीवन रक्षक ठाट के लिए  
विपत्ति संकेतकों की सामान्य अपेक्षाएँ

( पहला पुनरीक्षण )

*Indian Standard*

GENERAL REQUIREMENTS FOR DISTRESS  
SIGNALS FOR LIFEBOATS AND LIFERAFTS

( *First Revision* )

ICS 47.080

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BUREAU OF INDIAN STANDARDS  
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## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Marine Engineering and Safety Aids Sectional Committee had been approved by the Transport Engineering Division Council.

This standard was first published in 1966. This revision has been undertaken in order to incorporate changes in International Maritime Resolution requirements. In this revised standard general requirements for distress signals have been exhaustively specified.

This standard is in accordance with the statutory rules and the recommendations made by the International Convention for the Safety of Life at Sea, 2000.

Parachute distress rocket signals, red hand flares and buoyant smoke signals form part of the lifeboats and life-rafts equipment.

Notwithstanding what is stated in this standard, life saving appliances provided on board merchant navy ships, shall conform to statutory rules in this behalf under the *Merchant Shipping Act, 1958* as modified from time-to-time and shall be subject to the approval of the Government of India.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# Indian Standard

## GENERAL REQUIREMENTS FOR DISTRESS SIGNALS FOR LIFEBOATS AND LIFERAFTS

*(First Revision)*

### 1 SCOPE

This standard specifies the general requirements for distress signals for lifeboats and liferafts.

### 2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	Title
460	Specification for test sieves :
(Part 1) : 1985	Wire cloth test sieves ( <i>third revision</i> )
(Part 2) : 1985	Perforated plate test sieves ( <i>third revision</i> )
(Part 3) : 1985	Methods of examination of apertures of test sieves ( <i>third revision</i> )
2307 : 2004	Magnesium powder for explosive and pyrotechnic compositions — Specification ( <i>second revision</i> )

### 3 DESCRIPTION

#### 3.1 Parachute Distress Signals

Parachute distress signal consists of a single bright red star which is projected to a specified height by means of a rocket. This star burns while falling and its rate of fall is controlled by a parachute.

#### 3.2 Red Hand Flare

A hand flare that is capable of giving bright red light.

#### 3.3 Buoyant Smoke Signal

A signal equipment that is capable of floating on the water and emit a volume of orange coloured smoke.

### 4 GENERAL REQUIREMENTS FOR DISTRESS SIGNALS

**4.1** Indian Maritime Administration shall determine the period of acceptability of life saving appliances which are subject to deterioration with age. Such life saving appliances shall be marked with a

means for determining their age or the date by which they shall be replaced. Permanent marking with date of expiry is the preferred method of establishing the period of acceptability. Batteries not marked with expiry date may be used, if they are replaced annually, or in the case of a secondary battery (accumulator), if the condition of the electrolyte can be readily checked.

#### 4.2 Parachute distress signal shall:

- a) be constructed with proper workmanship and materials;
- b) not be damaged in stowage throughout the air temperature range  $-30^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$ ;
- c) operate throughout the seawater temperature range  $-1^{\circ}\text{C}$  to  $+30^{\circ}\text{C}$  if they are likely to be immersed in seawater during their use;
- d) be rot-proof, corrosion resistant, and not be unduly affected by seawater, oil or fungal attack where applicable;
- e) be resistant to deterioration where exposed to sunlight;
- f) be of a highly visible colour on all parts where this will assist detection;
- g) be fitted with retro-reflective material where it will assist in detection and in accordance with the recommendation of IMO resolution A.658 (16) ; and if applies to distress signals on all ships;
- h) be capable of satisfactory operation in that environment if they are to be used in a seaway;
- j) be clearly marked with approval information, including the Administration which approved it and any operational restrictions; and
- k) be provided with electrical short-circuit protection to prevent damage or injury where applicable.

### 5 OTHER GENERAL REQUIREMENTS FOR PARACHUTE SIGNALS

#### 5.1 Rocket

The rocket shall be contained in a water tight casing and shall be capable of satisfactory function after immersion in water for 1 min. The adhering water shall be removed by shaking prior to testing its proper function.

**5.1.1** All components, composition and ingredients shall be of such character and quality as to enable the rocket to maintain its serviceability under proper storage conditions for a period of at least two years. .

**5.1.2** The rocket shall be packed in a durable container hermetically sealed.

**5.1.3** The date on which the rockets are filled shall be stamped indelibly on the rockets and on the container.

**5.1.4** The rocket shall remain effective for a period of at least two years from the date of manufacture.

**5.1.5** The rocket shall have integral means of ignition and be so designed as not to cause discomfort to the person holding the casing when used in accordance with the manufacturer's operating instruction.

**5.1.6** The rocket when fired vertically, shall reach an altitude of not less than 300 m. At the top of its trajectory or near the top, the rocket shall eject a parachute flare.

**5.1.7** The rocket shall also be capable of functioning when fired at an angle of 45° to the horizontal.

**5.1.8** The metal containers of rockets shall be adequately protected against corrosion.

**5.1.9** The rocket shall have brief instructions or diagrams clearly illustrating the use of the rocket parachute flare printed on its casing.

## 5.2 Red Star

With lifeboats and liferafts the red star shall burn uniformly with an average luminous intensity of not less than 30 000 cd and have a burning period of not less than 40 s.

**5.2.1** The star shall burn out at a height of not less than 46 m from sea level.

**5.2.2** A composition of the red star should be as given below:

Magnesium powder, Grade 0	35 percent by weight
Boiled linseed oil	4 " " "
Potassium perchlorate	30 " " "
Strontium carbonate	11 " " "
Chlorinated rubber	20 " " "

**5.2.2.1** The magnesium powder, Grade 0, shall pass a sieve of 500 microns and shall be retained on a sieve of 125 microns.

**5.2.2.2** The potassium perchlorate and strontium carbonate shall pass a sieve of 125 microns [see IS 460 (Parts 1 to 3) and IS 2307].

**5.2.2.3** The chlorinated rubber shall be of such a grit that not less than 95 percent will pass a sieve of 500 microns. Its total chlorine content shall be not less than 61 percent and not greater than 66.5 percent.

## 5.3 Parachute

The size of the parachute shall be such as to control the rate of descent of not more than 5 m/s.

**5.3.1** The parachute shall be attached to the red star which shall neither damage the parachute nor attachments while burning.

## 6 OTHER GENERAL REQUIREMENT FOR RED HAND FLARES

**6.1** Every red hand flare shall have a self contained means of ignition.

**6.2** Red hand flares shall burn with a bright red colour burn uniformly with an average luminous intensity of not less than 15 000 cd and have a burning period of not less than 1 min.

**6.3** The flare shall be contained in a water tight casing and continue to burn after having been immersed for a period of 10 s under 100 mm of water.

**6.4** The shape of the handle of the red hand flare shall be such as to make it to hold the flare in hand to the end of the burning time.

**6.5** The container for the chemicals shall be made of seamless steel tubes or of such other materials as to ensure safety to the users.

**6.6** The date of filling shall be stamped indelibly on each flare.

**6.7** All red flares shall be packed in a container such that the flares shall be well protected from atmosphere and weather. The date of filling the flare shall also be indicated on the container.

**6.8** All components, composition and ingredients shall be such a character and quality as to enable the flare to maintain its serviceability under proper storage condition for a period of at least two years from the date of manufacture.

**6.9** When flare are carried in an inflatable liferaft, it shall be so designed as not to cause discomfort to the person holding the casing and not endanger the survival craft by burning or glowing residues when used in accordance with the manufacturers operating instructions.

**6.10** Have brief instructions or diagrams clearly illustrating the use of the hand flare printed on its casing.

## 7 OTHER GENERAL REQUIREMENT FOR BUOYANT SMOKE SIGNAL

The buoyant smoke signal shall:

- a) be contained in a water resistant casing;
- b) not ignite explosively when used in accordance with the manufacturer's operating instruction;
- c) have brief instructions or diagrams clearly illustrating the use of the buoyant smoke hand

flare printed on its casing;

- d) emit smoke of a highly visible color at a uniform rate for a period of not less than 3 min when floating in calm water;
- e) not emit any flame during the entire smoke emission time; and
- f) not be swamped in a seaway and continue to emit smoke when submerged in water for a period of 10 s under 100 mm of water.

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### **Amendments Issued Since Publication**

Amend No.	Date of Issue	Text Affected

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